ZooKeys 84: 13–21 (2011)
doi: 10.3897/zookeys.84.1189
www.zookeys.org

RESEARCH ARTICLE

A peer-reviewed open-access journal
ZooKeys
Launched to accelerate biodiversity research

Notes on the *Nazeris* fauna of Yunnan Province, China (Coleoptera, Staphylinidae, Paederinae)

Jia-Yao Hu[1,2,†], Li-Zhen Li[2,‡], Yun-long Zhao[1,§]

1 *Department of Biology, East China Normal University, 3663 North Zhongshan Road, Shanghai, 200062 P. R. China* **2** *Department of Biology, Shanghai Normal University, 100 Guilin Road, Shanghai, 200234 P. R. China*

† *urn:lsid:zoobank.org:author:7DDE2164-18DE-4D55-A5AB-FEB0F9388A38*
‡ *urn:lsid:zoobank.org:author:BBACC7AE-9B70-4536-ABBE-54183D2ABD45*
§ *urn:lsid:zoobank.org:author:ED604F1A-C78B-4AAC-916C-A73AB0A2EC7D*

Corresponding author: *Yun-long Zhao* (ylzhao@bio.ecnu.edu.cn)

Academic editor: *Volker Assing* | Received 9 March 2010 | Accepted 12 January 2011 | Published 1 March 2011

urn:lsid:zoobank.org:pub:E27D8AB1-223C-4246-B208-400014DDDF7E

Citation: Hu J-Y, Li L-Z, Zhao Y-L (2011) Notes on the *Nazeris* fauna of Yunnan Province, China (Coleoptera, Staphylinidae, Paederinae). ZooKeys 84: 13–21. doi: 10.3897/zookeys.84.1189

Abstract

Two new species of the genus *Nazeris* Fauvel collected from Nabanhe Nature Reserve, Yunnan Province, are described under the names of *N. nabanhensis* **sp. n.** and *N. caoi* **sp. n.** The male sexual characters are described and illustrated. A key to the *Nazeris* species of Yunnan is provided. A map of the collecting sites is given.

Keywords

Coleoptera, Staphylinidae, Paederinae, *Nazeris*, key, Yunnan, China, new species

Introduction

The genus *Nazeris* Fauvel (1873: 298) can be readily distinguished from other Paederinae by the labrum having four teeth at the front margin and the bi-lobed 4th tarsal segments. Up to the present, 51 species and subspecies of *Nazeris* have been recorded from China. Yunnan is a mountainous province located in Southwest China, from

Copyright *J.-Y. Hu, L.-Z. Li, Y.-L. Zhao.* This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

which nine species of *Nazeris* have been described: *N. zhangi* Watanabe & Xiao (1993: 130) from "Yu'an-shan near Kunming City", *N. giganteus* Watanabe & Xiao (1997:2) and *N. daliensis* Watanabe & Xiao (1997: 7) from "Diancang shan Mts., Dali shi", *N. alpinus* Watanabe & Xiao (1997: 5) from "Mt. Yulongxue shan, Lijiang County", *N. jizushanensis* Watanabe & Xiao (1997: 9) from "Mt. Jizu Shan, Binchuan County", *N. baihuaensis* Watanabe & Xiao (2000: 312), *N. ishiianus* Watanabe & Xiao (2000: 319) and *N. nomurai* Watanabe & Xiao (2000: 316) from "Gaoligong Shan Mts., Baoshan area", *N. huanxipoensis* Watanabe & Xiao (2000: 318) from "Huanxipo, Tengchong Xian". Only two species have become known from the three countries adjacent to Yunnan (Myanmar, Laos and Vietnam): *Nazeris coomani* Jarrige (1948: 40) (redescribed by Rougemont 1988: 775) from "du mont Bavi, Tonkin" (Vietnam) and *Nazeris odzisan* Watanabe (1996: 1) from "Mt. Tam Dao, Vinh Phu Prov." (Vietnam).

The specimens from Yunnan Province contained another two undescribed species, *N. nabanhensis* sp. n. and *N. caoi* sp. n. The male sexual characters of the two new species are described and illustrated. A map (fig. 13) of the collecting sites of *Nazeris* species in Yunnan and a key to the Yunnan species are provided.

The types are deposited in the Insect Collections of Department of Biology, Shanghai Normal University, Shanghai, P. R. China (SHNUC).

Methods

The specimens were collected from decaying leaf litter of forest floors by hand sifting. They were killed with ethyl acetate and dried. To examine the male genitalia, the last four abdominal segments were detached from the body after softening in hot water. The aedeagi and sternites were mounted in Euparal on plastic slides. Drawings were made using an Olympus SZ61 microscope. Photos were taken with an Olympus E420 camera mounted on an Olympus SZX12 stereoscope. Material of other Yunnanese *Nazeris* species was not examined. The characters used in comparative remarks and keys are according to descriptions of Watanabe and Xiao (1993, 1997, 2000), Watanabe (1996), Jarrige (1948) and Rougemont (1988).

Measurements

Body length: measured from anterior margin of labrum to end of abdomen;
Forebody length: measured from anterior margin of labrum to elytral apices;
Eye length: longitudinal length of eye in dorsal view;
Postocular length: length of postocular portion in dorsal view;
Head width: width of head across eyes;
Pronotum width: width of pronotum across the widest part;
Elytra width: width of elytra across the widest part;
Head length: measured from front margin of head to its posterior margin;

Pronotum length: measured from front margin of pronotum to its posterior margin; Elytra length: measured from humeral angle to apicolateral angle.

Descriptions

***Nazeris nabanhensis* sp. n.**
urn:lsid:zoobank.org:act:7B0F8A68-2EEE-412E-9090-9F1CE8EBA8ED
Figs 1, 3–7

Type material. CHINA: Holotype: Yunnan Prov.: male, Jinghong City, Nabanhe Nature Reserve, Benggangxinzhai, 1,750m, 16. XI. 2008, Hu Jia-Yao & Tang Liang leg. Paratypes: 2 females, Jinghong City, Nabanhe Nature Reserve, Bengganghani, Nanmugahe, 1,700m, 11. XI. 2008, Hu Jia-Yao & Tang Liang leg.; 1 female, Jinghong City, Nabanhe Nature Reserve, Bengganghani, 1,800m, 14. XI. 2008, Hu Jia-Yao & Tang Liang leg.; 5 males, 8 females, same locality as holotype, 3. V. 2009, Hu Jia-Yao & Yin Zi-Wei leg.; 1 female, Jinghong City, Nabanhe Nature Reserve, Bengganghani, Nanmugahe, 1,700m, 27. IV. 2009, Hu Jia-Yao & Yin Zi-Wei leg.; 3 females, Jinghong City, Nabanhe Nature Reserve, Bengganghani, Chuguohe, 1,700m, 28. IV. 2009, Hu Jia-Yao & Yin Zi-Wei leg.; 1 male, 1 female, Jinghong City, Nabanhe Nature Reserve, Bengganghani, 1,650m, 29. IV. 2009, Hu Jia-Yao & Yin Zi-Wei leg.; 1 male, Jinghong City, Nabanhe Nature Reserve, Bengganghani, Nanmugahe, 1700m, 30. IV. 2009, Hu Jia-Yao & Yin Zi-Wei leg.; 4 females, Jinghong City, Nabanhe Nature Reserve, Bengganghani, 1,650m, 30. IV. 2009, Hu Jia-Yao & Yin Zi-Wei leg. SHNUC.

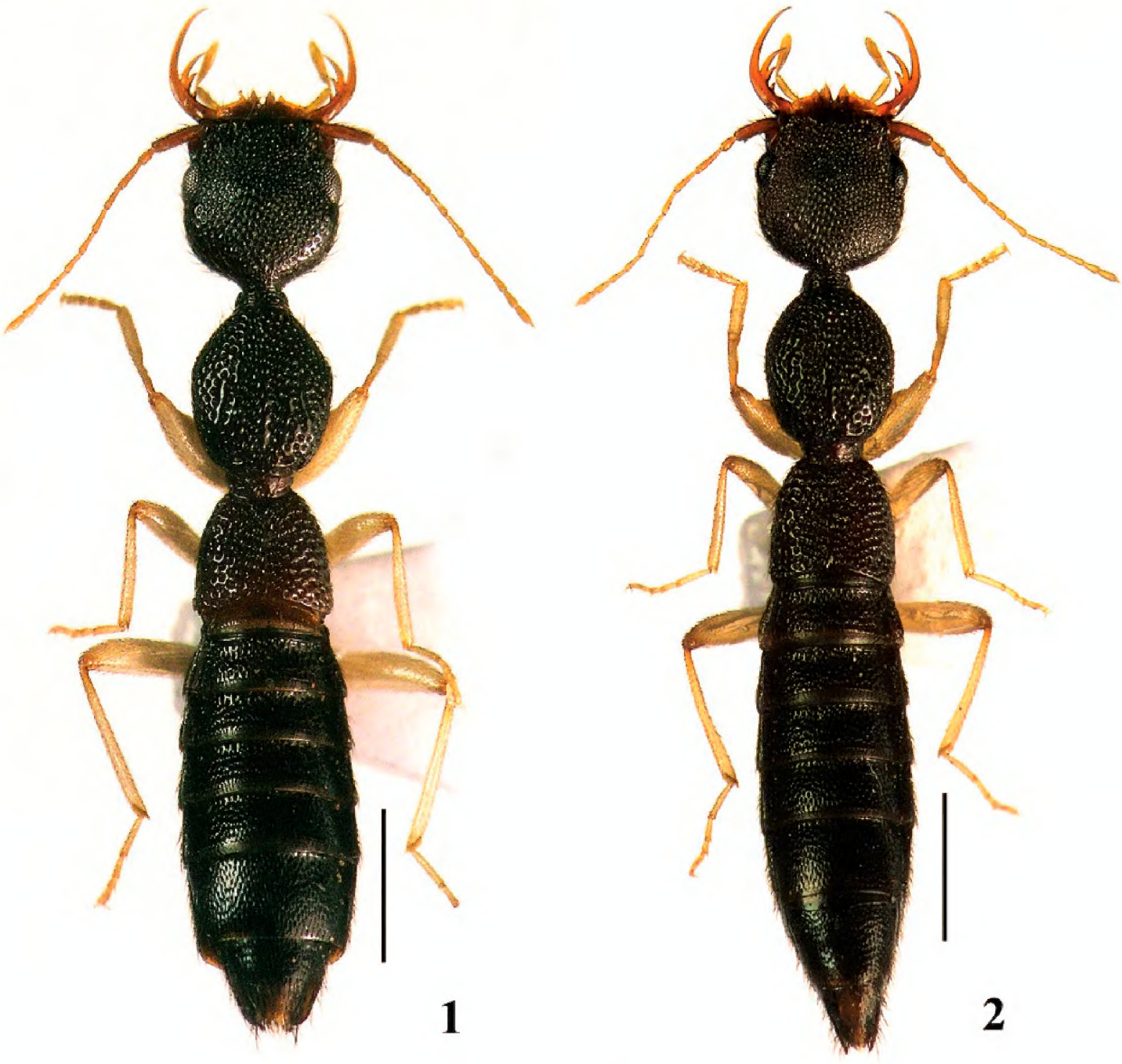
Description. Body length: 5.8–6.4 mm; forebody length: 3.3–3.5 mm.

Male. Body (Fig. 1) elongate, dark brown, with labrum, coxae, and basal antennomeres reddish yellow, the remaining antennomeres, maxillary palpi and legs yellow, with exception for coxae.

Head suborbicular, longer than wide (length/width = 1.18); postocular portion 1.96 times as long as eye length; punctation coarse, dense, and umbilicate; interstices reduced to narrow ridges. Antennae slender; relative length of each segment from 1 to 11: 42.0 : 15.0 : 29.0 : 23.0 : 22.5 : 22.0 : 19.0 : 17.0 : 15.5 : 14.0 : 20.0; relative width of each segment from 1 to 11: 12.0 : 7.5 : 6.0 : 6.0 : 6.0 : 6.0 : 6.0 : 6.0 : 6.0 :7.5 : 7.5.

Pronotum convex, oval, longer than wide (length/width = 1.20), narrower (pronotum/head = 0.93) and shorter (pronotum/head = 0.94) than head; prosternum with strong longitudinal median carina, which disappears behind anterior margin. Elytra shorter than wide (length/width = 0.91), distinctly shorter (elytra/pronotum = 0.74) and slightly narrower (elytra/pronotum = 0.97) than pronotum.

Abdomen elongate, tergites without any microsculpture. Seventh sternite (Fig. 3) trapezoidally emarginated in middle of posterior margin and distinctly depressed in front of emargination; 8th sternite (Fig. 4) V-shaped deeply excised in middle of posterior margin. Aedeagus (Figs 5, 6 and 7) well sclerotized; apical part of me-

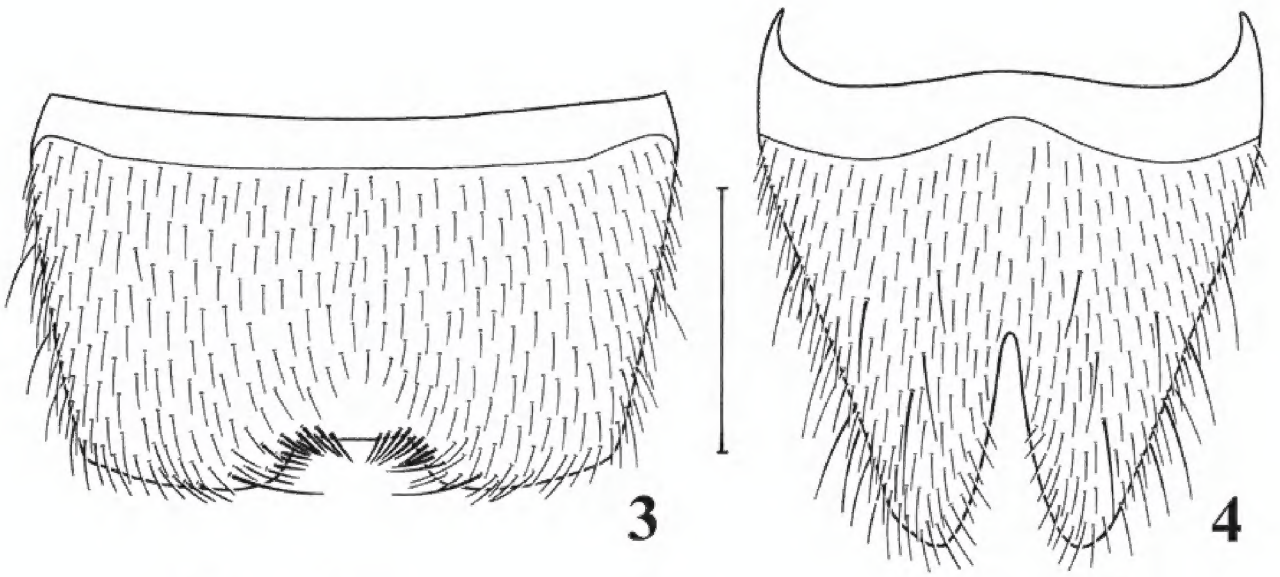


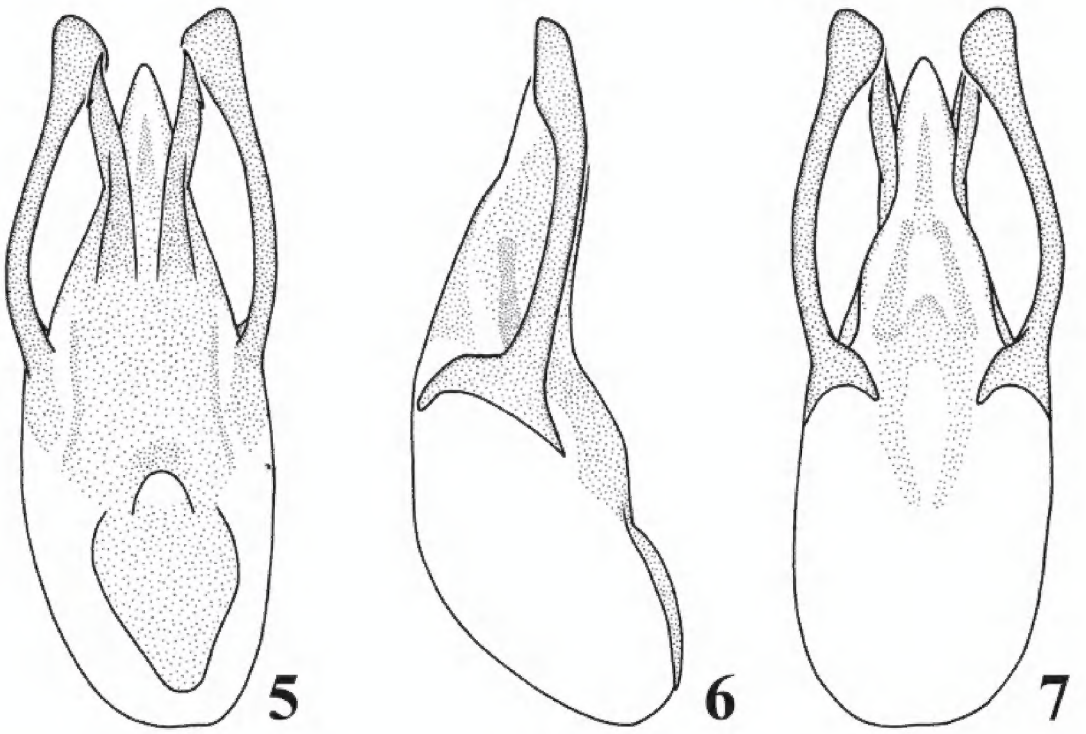
Figures 1–2. Habitus of *Nazeris*. **1** *N. nabanhensis* sp. n. **2** *N. caoi* sp. n. Scale bars 1 mm.

dian lobe in dorsal view tri-lobed, median part cone-shaped, two outer parts acute at apices, with little agnail in each outer side near apex; dorso-lateral apophyses slightly curved inward, distinctly widened near apex, extending beyond apices of median lobe.

Female. Seventh and 8th sternites simple. The other characters are similar to those of male.

Remarks. The new species is similar to *N. daliensis* Watanabe (1997: 7) from Yunnan Province in appearance, but it can be distinguished from the latter by the following characters: elytra slightly narrower than pronotum (in *N. daliensis* nearly as wide as, or slightly broader than pronotum); depth of excision of male 8th sternite nearly half of middle length of sternite (in *N. daliensis* much shallower, nearly 1/3 of middle length of 8th sternite); apical part of median lobe of aedeagus in dorsal view tri-lobed (in *N. daliensis* not lobed). The new species can be distinguished from *N. coomani* Jarrige (1948: 40) from Vietnam by head with umbilicate punctation (in *N.*





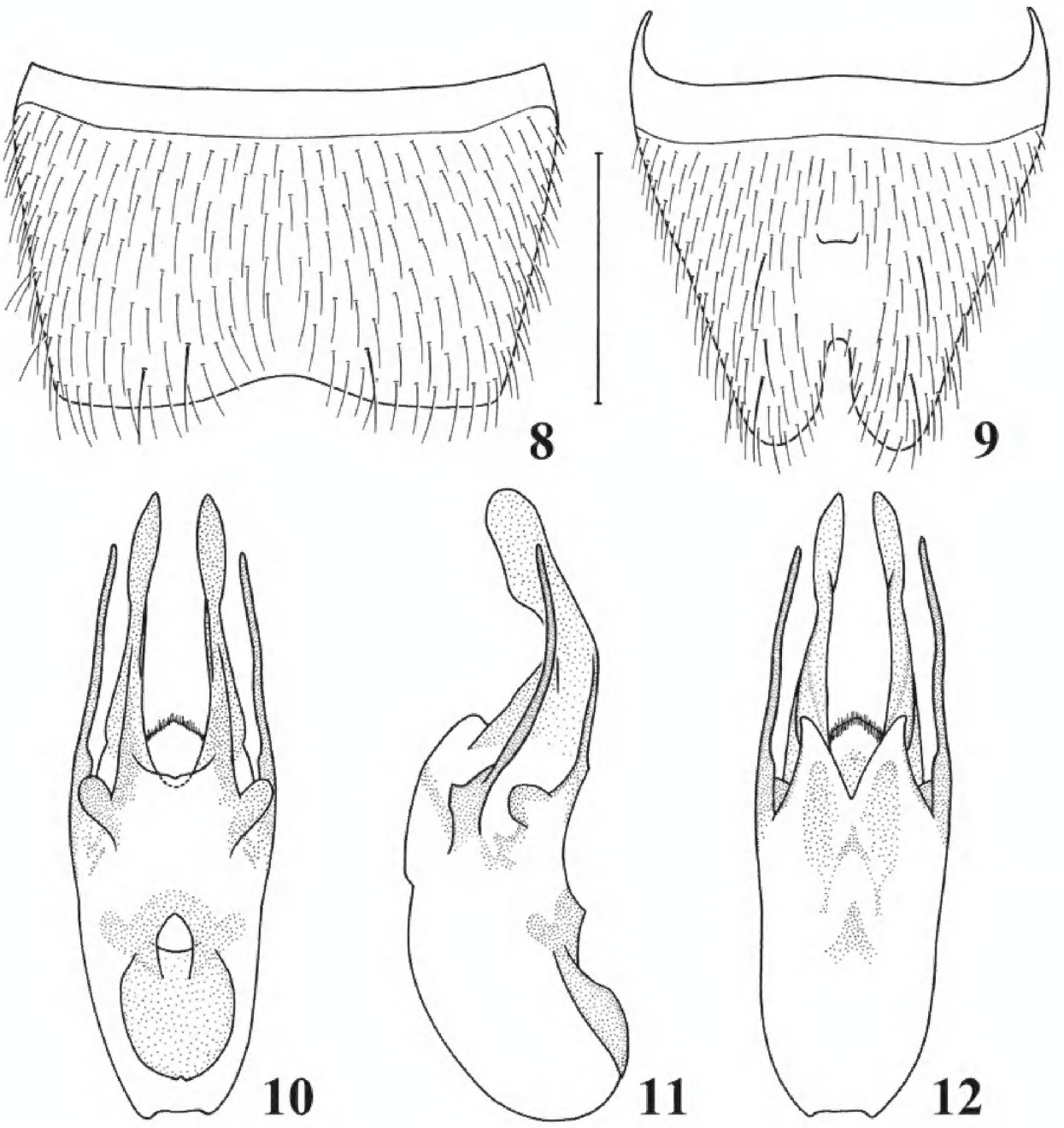
Figures 3–7. Details of *Nazeris nabanhensis* sp. n. **3** male 7th sternite **4** male 8th sternite **5** aedeagus, in dorsal view **6** aedeagus, in lateral view **7** aedeagus, in ventral view. Scale bar: 0.5 mm.

coomani punctation of head simple) and distinguished from *N. odzisan* Watanabe (1996: 1) from Vietnam by elytra shorter than wide (in *N. odzisan* elytra longer than wide); dorso-lateral apophyses of aedeagus extending beyond apices of median lobe (in *N. odzisan* not extending to apices of median lobe).

Etymology. The specific name is derived from the name of the type locality: Nabanhe Nature Reserve.

***Nazeris caoi* sp. n.**
urn:lsid:zoobank.org:act:3B251645-1B6B-4388-ACEC-4E5B42C4A858
Figs 2, 8–12

Type material. CHINA: Holotype: Yunnan Prov.: male, Jinghong City, Nabanhe Nature Reserve, Bengganghani, 1,930m, 14. XI. 2008, Hu Jia-Yao & Tang Liang leg.



Figures 8–12. Details of *Nazeris caoi* sp. n. **8** male 7th sternite **9** male 8th sternite **10** aedeagus, in dorsal view **11** aedeagus, in lateral view **12** aedeagus, in ventral view. Scale bar: 0.5 mm.

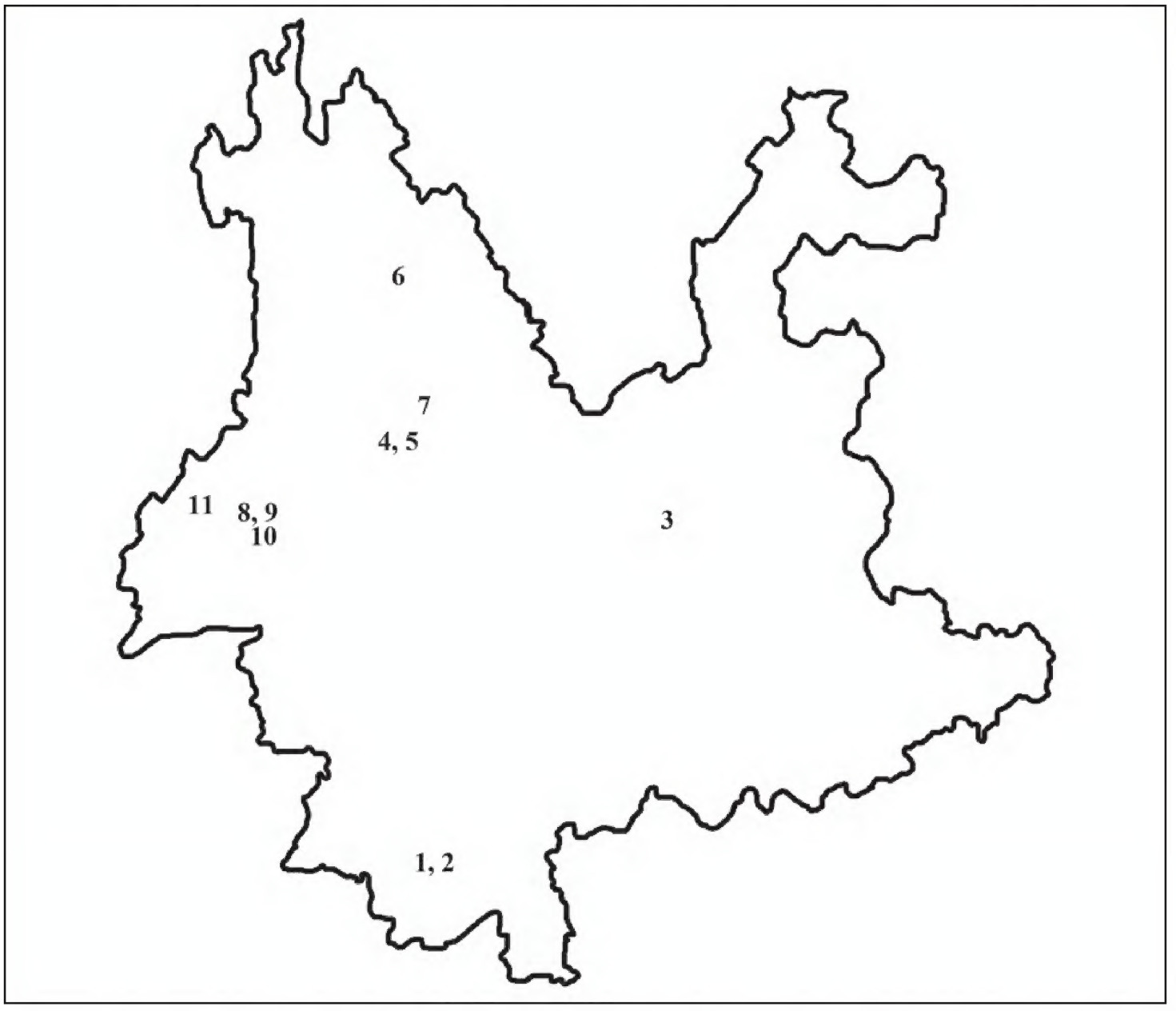
Paratypes 1 male, same data as holotype; 1 female, Jinghong City, Nabanhe Nature Reserve, Bengganghani, 1,900m, 1. V. 2009, Hu Jia-Yao & Yin Zi-Wei leg. SHNUC.

Description. Body length: 6.1–6.4 mm; forebody length: 3.3–3.6 mm.

Male. Body (Fig. 2) elongate, dark brown, with labrum, coxae, and basal two antennomeres reddish yellow, the remaining antennomeres, maxillary palpi and legs yellow, with exception for coxae.

Head suborbicular, slightly longer than wide (length/width = 1.07); postocular portion 2.14 times as long as eye length; punctation coarse, dense, and umbilicate; interstices reduced to narrow ridges. Antennae slender; relative length of each segment from 1 to 11: 42.0 : 13.5 : 30.0 : 23.0 : 21.0 : 21.0 : 19.0 : 18.0 : 18.0 : 16.0 : 22.0; relative width of each segment from 1 to 11: 10.5 : 7.0 : 6.5 : 6.0 : 5.5 : 6.0 : 5.5 : 5.5 : 6.0 :6.5 : 7.0.

Pronotum convex, oval, longer than wide (length/width = 1.19), narrower (pronotum/head = 0.88) and shorter (pronotum/head = 0.98) than head; prosternum with



Figures 13. Map showing the collecting sites of the *Nazeris* in Yunnan Prov.; **1** *N. nabanhensis* sp. n. **2** *N. caoi* sp. n. **3** *N. zhangi* Watanabe & Xiao **4** *N. giganteus* Watanabe & Xiao **5** *N. daliensis* Watanabe & Xiao **6** *N. alpinus* Watanabe & Xiao **7** *N. jizushanensis* Watanabe & Xiao **8** *N. baihuaensis* Watanabe & Xiao **9** *N. ishiianus* Watanabe & Xiao **10** *N. nomurai* Watanabe & Xiao **11** *N. huanxipoensis* Watanabe & Xiao.

strong longitudinal median carina, which disappears behind anterior margin. Elytra slightly shorter than wide (length/width = 0.97), distinctly shorter (elytra/pronotum = 0.80) and slightly narrower (elytra/pronotum = 0.97) than pronotum.

Abdomen elongate, tergites without any microsculpture; densely and coarsely punctate. Seventh sternite (Fig. 8) distinctly emarginated in middle of posterior margin; 8th sternite (Fig. 9) with little short protrusion in middle, deeply excised in middle of posterior margin. Aedeagus (Figs 10, 11 and 12) well sclerotized; median lobe bi-lobed in dorsal view, curved ventrad in apical 1/3 in lateral view; dorso-lateral apophyses very thin, slightly curved ventrad, not extending to apices of median lobe.

Female. Seventh and 8th sternites simple. The other characters are similar to those of male.

Remarks. The present new species is similar in appearance to *N. nabanhensis* sp. n. from the same locality, but can be distinguished from the latter by the following

characters: postocular part more than twice as long as longitudinal diameter of each eye (in *N. nabanhensis* less than twice as long as longitudinal diameter of each eye); median lobe of aedeagus in dorsal view bi-lobed (in *N. nabanhensis* tri-lobed); dorso-lateral apophyses of aedeagus not extending to apices of median lobe (in *N. nabanhensis* extending beyond apices of median lobe). The new species can be distinguished from *N. coomani* Jarrige (1948: 40) from Vietnam by head with umbilicate punctation (in *N. coomani* punctation of head simple), and distinguished from *N. odzisan* Watanabe (1996: 1) from Vietnam by elytra shorter than wide (in *N. odzisan* elytra longer than wide); median lobe of aedeagus in dorsal view bi-lobed (in *N. odzisan* not lobed).

Etymology. The species is named in honor of Mr. Guanghong Cao of Nabanhe Nature Reserve, who helped us a lot during field work.

Key to species of *Nazeris* from Yunnan Province, China

1 Body length less than 4.5 mm; posterior margin of male 7th sternite not emarginate ..... ***N. zhangi* Watanabe & Xiao**

– Body length at least 5.0 mm; posterior margin of male 7th sternite emarginate **2**

2 Male 8th sternite with short protrusion in middle, median lobe of aedeagus bi-lobed in dorsal view ..... ***N. caoi* sp. n.**

– Male 8th sternite without protrusion in middle, median lobe of aedeagus not bi-lobed in dorsal view **3**

3 Median lobe of aedeagus tri-lobed in dorsal view ..... ***N. nabanhensis* sp. n.**

– Median lobe of aedeagus not tri-lobed in dorsal view **4**

4 Dorso-lateral apophyses of aedeagus extending beyond apex of median lobe **5**

– Dorso-lateral apophyses of aedeagus not extending to apex of median lobe **9**

5 Dorso-lateral apophyses of aedeagus dilated in apical part and markedly curved ventrad in apical half ..... ***N. nomurai* Watanabe & Xiao**

– Dorso-lateral apophyses of aedeagus not dilated in apical part and not markedly curved ventrad in apical half **6**

6 Median lobe of aedeagus subtriangular in apical third and curved dorsad near apex in lateral view, dorso-lateral apophyses curved ventrad near apex in lateral view ..... ***N. huanxipoensis* Watanabe & Xiao**

– Median lobe of aedeagus not subtriangular in posterior third, not curved dorsad near apex in lateral view, dorso-lateral apophyses nearly straight in lateral view 7

7 Dorso-lateral apophyses of aedeagus dilated at middle; median lobe of aedeagus without wing-shaped process ..... ***N. baihuaensis* Watanabe & Xiao**

– Dorso-lateral apophyses of aedeagus not dilated at middle; median lobe of aedeagus with a wing-shaped process on each side near middle **8**

8 Postocular part less than twice as long as eye length; depth of excision of posterior margin of male 8th sternite more than twice its width ..... ***N. jizushanensis* Watanabe & Xiao**

– Postocular part more than twice as long as eye length; depth of excision of posterior margin of male 8th sternite nearly the same its width..... ..... ***N. daliensis*** **Watanabe & Xiao**

9 Median lobe of aedeagus semicircularly emarginate at apex..... ..... ***N. ishiianus*** **Watanabe & Xiao**

– Median lobe of aedeagus not emarginate at apex..... **10**

10 Median lobe of aedeagus tongue-shaped; dorso-lateral apophyses of aedeagus very narrow and near straight in dorsal view.... ***N. alpinus*** **Watanabe & Xiao**

– Median lobe of aedeagus not tongue-shaped, distinctly narrowed in apical 1/4 in dorsal view; dorso-lateral apophyses of aedeagus markedly curved inward in dorsal view ..... ***N. giganteus*** **Watanabe & Xiao**

Acknowledgements

We thank Mr. Guanghong Cao and Mr. Maoxing Tian (Nabanhe Nature Reserve) for their help during field work. We thank Dr. Liang Tang and Mr. Ziwei Yin (Shanghai Normal University) for their collecting the specimens and continuous help in many ways. We thank Dr. Ales Smetana (Agriculture and Agri-Food Canada) for revision our paper. This study is supported by the National Natural Science Foundation of China (No. 30870323) and by Shanghai Normal University (No. SK200833 and SK200834).

References

Fauvel A (1873) Faune Gallo-Rhénane ou species des insectes qui habitent la France, la Belgique, la Hollande, le Luxembourg, la prusse Rhénane, la Nassau et la Valais avec tableaux synoptiques et planches gravées. Tome 3. Livraison 4. Caen: Le Blanc-Hardel, 215–390.

Jarrige J (1948) Staphylinides nouveaux d'Asie orientale. Notes d'Entomologie Chinoise, Musée Heude 12: 39–41.

Rougemont GM (1988) Un *Nazeris* nouveau de Thaïlande (Coleoptera, Staphylinidae, Paederinae). Revue Suisse de Zoologie 95: 773–777.

Watanabe Y (1996) A new *Nazeris* (Coleoptera, Staphylinidae) from northern Vietnam. Species Diversity 1: 1–5.

Watanabe Y, Xiao NN (1993) A new species of the genus *Nazeris* (Coleoptera, Staphylinidae) from Yunnan Province, Southwest China. Elytra, Tokyo 21(1): 129–133.

Watanabe Y, Xiao NN (1997) Four new *Nazeris* (Coleoptera, Staphylinidae) from Yunnan Province, Southwest China. Edaphologia (58): 1–12.

Watanabe Y, Xiao NN (2000) Four new species of the genus *Nazeris* (Coleoptera, Staphylinidae) from the Gaoligong Shan Mountains in Yunnan, Southwest China. Elytra, Tokyo 28(2): 311–321.